



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,382	04/19/2004	Bo-Qing Yang	YANG3171/BEU	9717
23364 7590 01/22/2007 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			EXAMINER LAO, LUN YI	
			ART UNIT 2629	PAPER NUMBER

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/826,382

Applicant(s)

YANG, BO-QING

Examiner

LUN-YI LAO

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/19/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1-13 are objected to because of the following informalities: the recitation of "a device" should be changed to -- a first device --. Appropriate correction is required.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 2629

3. Claims 1-13 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. US 20050264520 in view of Bohn(7,075,516).

US 20050264520 teaches an input device comprising: a housing; a carrier pivotally supported within the housing; a wheel with a first axle rotatably supported within the carrier; an extended axle for pivotally mounting the carrier; a device for detecting rotation of the extended axle in response to tilting of the carrier and a second device for detecting rotation of the first axle wherein the wheel is arranged to be freely rotated; wherein the carrier is arranged to be tilted left and right; wherein the second device is an encoder coupled to the first axle.

US 20050264520 fail to disclose an input device for scrolling image on a display.

Bohn teaches an input device comprising a wheel for scrolling image on a display(see figures 1, 5-9; column 7, lines 45-68 and column 8, lines 1-49). It would have been obvious to have modified US 20050264520 with the teaching of Bohn, so as to provide an input device with a scrolling function to move an image on a display very accurately.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledbetter et al(US 20030025673) in view of Bohn(7,075,516).

As to claims 1-3 and 5-13, Ledbetter et al teach an input device with a multi-directional scrolling wheel, comprising: a housing; a carrier(350) pivotally supported within the housing(see figures 19-28 and paragraph 87); a wheel(310) with a first axle(e.g. 342, 344, 444)(see figures 19-28 and paragraphs 80, 87-88) rotatably supported within the carrier(350); an extended axle(e.g. 352 or 452)(see figures 19-28 and paragraph 104) for pivotally mounting the carrier(350); a device(370, 373, 377) for detecting rotation of the extended axle(352) in response to tilting of the carrier(350)(see figures 19-28 and paragraph 88); and a second device(381, 382) for detecting rotation of the first axle(e.g. 342, 344, 444 and paragraph 84); wherein the wheel is arranged to be freely rotated so as to scroll an image in a Y-axis direction; wherein the carrier is arranged to be tilted left and right so as to scroll the image in an X-axis direction(see figures 1, 5-6; 18-28 and paragraph 56); wherein the second device(381, 382) is an encoder coupled to the first axle(see figures 19-28 and paragraph 84).

Ledbetter et al fail to disclose the second device positioned outside the carrier.

Art Unit: 2629

Bohn teaches the second device(72-74) positioned outside the carrier(100)(see figure 5 and column 6, lines 18-40). It would have been obvious to have modified Ledbetter et al with the teaching of Bohn, since the change the location of a rotation sensor has been generally recognized as being within the level of ordinary skill in the art and it will be more easy to repair the second device by locating the second device outside the wheel.

As to claim 2, Ledbetter et al teach the input device(370, 373, 377) is a first encoder coupled to the extended axle(352) and located outside of the carrier(350) for detecting rotation of the extended axle that results from tilting of the carrier(see figures 19-22 and paragraph 88).

As to claim 3, Ledbetter et al teach the first device(370, 373, 377) is a potentiometer(see figures 20, 22 and paragraph 88).

As to claim 5, Ledbetter et al as modified teach the extended axle(352) of the carrier(350) is perpendicular to the axle(342, 344, 444) of the wheel(see Ledbetter et al's figures 19-28 and Bohn's figures 5-9).

As to claim 6, Ledbetter et al as modified teach the extended axle is arranged to activate a microswitch positioned below the extended axle when the wheel is pressed in a vertical direction to cause corresponding vertical movement of the extended axle(see Ledbetter et al's figure 24 and paragraph 104; and Bohn's figures 5-7 and column 7, lines 36-54).

As to claim 7, Ledbetter as modified the first device includes microswitches positioned on opposite sides of a downwardly extending portion of the extended axle,

Art Unit: 2629

the microswitches being arranged to detect rotation of the extended axle resulting from tilting of the wheel(Bohn's figures 5-9 and column 7, lines 36-68 and column 7, lines 1-24).

As to claim 8, Ledbetter as modified teach a retaining unit(90) is located within the housing to maintain the carrier in a non-tilted position(a neutral position or a central position)(see Bohn's figures 6-7; column 8, lines 38-49 and column 9, lines 36-45).

As to claim 9, Ledbetter et al as modified teach the retaining unit(90)is made of a flexible material(springs)

As to claim 10, Ledbetter et al as modified teach the first axle is arranged to activate a micro switch(473) located outside of the carrier(350) when the wheel is pressed in a downward direction(see figures 8-9, 19-27 and paragraphs 63 and 102).

As to claim 11, Ledbetter et al teach the wheel has an inner wheel and an outer wheel; and the outer wheel is arranged to tilt relative to the inner wheel in order to tilt the carrier, a resulting movement of the extended axle(352, 452) being detected to cause the scrolling in the X-axis direction(see figures 1, 8-9, 19-28 and paragraphs 56 and 102).

As to claims 12 and 13, Ledbetter et al teach a periphery of inner wheel at least has a first retaining portion(recess portion), and a periphery of the outer wheel correspondingly has at least a second retaining portion(protrusion portion, e.g. 389); the first retaining portion allowing a tilting movement of the second retaining portion(see figures 21-28).

Art Unit: 2629

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ledbetter et al(US 20030025673) in view of Bohn(7,075,516) in view of Culver(4,982,618).

Ledbetter et al as modified fail to disclose the second device is a potentiometer.

Culver teaches the second device(rotation encoder) is a potentiometer)(see figures 14-15; column 1, lines 23-38; column 11, lines 54-68 and column 12, lines 1-16). It would have been obvious to have modified Ledbetter et al as modified with the teaching of Culver, since Culver has disclosed optical rotation encoder could be replaced by potentiometer encoder(column 11, lines 54-68 and column 12, lines 1-16).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chou et al(6,717,572) teach an input device having a rolling member(33) and a switch(130) under the rolling member(33).

Deruginsky et al(6,555,768) teach an input device having a rolling key and switches(8,9) positioned below the rolling key.

Pruchniak(6,075,518) teach an input device having a rotational wheel.

Shinohe et al(6,697,050) an input device having a rotational wheel.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671.

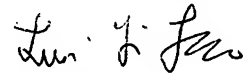
The examiner can normally be reached on M-F.

Art Unit: 2629

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

January 12, 2007



Lun-yi Lao

Primary Examiner